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SSIC NO. 5090.3

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Ser BPMOW.GC\0905
June 30, 2005

Ms. Debbie Potter
Base Reuse and Redevelopment Manager
Alameda Reuse and Redevelopment Authority
Alameda Point
950 West Mall Square – Building 1
Alameda, CA 94501-5012

Dear Ms. Potter:

Subj: DRAFT FINAL REMEDIAL INVESTIGATION REPORT, SITES 3, 4, 11, AND 21, ALAMEDA POINT, ALAMEDA, CALIFORNIA

Thank you for your letter of June 16, 2005, which contained comments regarding the above captioned report. The following are responses to your comments:

1. **Comment:** In the final RI, please include estimates of health risks to current workers separately for all buildings at OU-2B that are currently being used. The draft RI, estimates health risks to current workers separately for currently occupied buildings at OU-2B (Section 7.5.3.1 on page F-58 of Appendix F of the April 1, 2004 RI). Inexplicably, the draft final RI no longer estimates these building-specific risks. Instead, the health risk to current workers is calculated OU-wide, as though workers in all buildings are similarly exposed. This assumption appears to be inappropriate, because groundwater contamination by volatile organic compounds (VOCs) in the vicinity of some buildings is much greater than near others.

   Response: The draft final remedial investigation (RI) report did not retain the building specific risk estimates from the draft RI because the data and assumptions are more consistent with the main purpose of conducting a human health risk assessment (HHRA) as part of a RI under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The purpose of the HHRA is to provide information that can be used to support risk management decisions regarding the need for remedial action and selection of the most appropriate remedial alternative, if necessary. Therefore, neither of the HHRAs presented in the draft or the draft final RI reports should be viewed as an estimate of actual risk, because many of the parameters used in the risk model are conservative and do not represent an individual's actual exposure. In EPA's comments on draft RI, they commented that it was not appropriate to use a single value, albeit the maximum concentration, to calculate the risk. Instead, EPA preferred the vapor inhalation be conducted for each plume.

   Based upon the actual building dimensions used in the draft final HHRA, indoor air concentrations are likely to be much lower than modeled in the risk assessment. In the draft final HHRA, current and future commercial/industrial buildings are assumed to be two-story buildings with dimensions of approximately 10 meters by 10 meters.

The currently occupied buildings at operable unit (OU) -2B (Building 14 and 162) are much larger. Building 162 is approximately 45 meters by 125 meters, with a ceiling of 6 meters. Building 14 is approximately 70 meters by 150 meters, with a ceiling of 3 meters. Modeled indoor air concentrations are inversely proportional to interior building volumes.

In addition, consistent with agreements with the regulatory agencies, over 400 samples were included in the HHRA data set and older historical data was also used, which may not be representative of current site conditions. Actual concentrations would be expected to be much lower than those modeled in the HHRA.

However, as discussed below in the response to comment 3, the Navy recognizes the need to provide estimates of specific risks posed to the current occupants of the buildings at OU-2B and is planning to collect additional data that are required to accurately evaluate the exposures of the current building occupants to volatile organic compounds (VOC) in indoor air. Those data will be collected by conducting soil gas sampling in the vicinity of occupied buildings in OU-2B to further evaluate exposure of current occupants to VOCs in indoor air, which will be more representative than any previously modeled risk for the buildings.

2. **Comment:** The text of the HHRA apparently understates the health risks to current workers at OU-2B. The "Current/Future Commercial/Industrial Worker" subsection of Section 7.4.2 on page F-39 states:

> "Vapor intrusion to indoor air was the only complete groundwater pathway for the commercial/industrial worker. The total carcinogenic risk from exposure to groundwater via vapor intrusion is 1×10^{-4}, which is within the risk management range of 1×10^{-4} to 1×10^{-6} for carcinogens (see Table F-9.1.1). The majority of this risk is associated with exposure to TCE (1×10^{-4}), which is the only analyte exceeding the 1×10^{-6} risk level."

However, the referenced Table F-9.1.1 estimates much higher health risk to current workers. The above-cited passage from Section 7.4.2 should be restated as follows in order to agree with Table F-9.1.1 (changed portions are **emphasized**).

> "Vapor intrusion to indoor air was the only complete groundwater pathway for the commercial/industrial worker. The total carcinogenic risk from exposure to groundwater via vapor intrusion if **1.5×10^{-3}**, which is **15 times higher than** the risk management range of 1×10^{-4} to 1×10^{-6} for carcinogens (see Table F-9.1.1). The majority of this risk is associated with exposure to TCE (**1.5×10^{-3}**), which is the only analyte exceeding the 1×10^{-6} risk level."

The risk information in Table F-9.1.1, which applies specifically to IR-03, is repeated in Tables F-9.2.1, F-9.3.1, and F9.4.1, which pertain to IR-04, IR-11, and IR-21, respectively.

The apparent understatement of human health risks is carried forward to the body of the draft final RI, including the "Executive Summary" and Section 10.5 "OU-wide Groundwater Plume Conclusions and Recommendations". This discrepancy should be resolved in the final RI.

Response: The risk estimates for current and future commercial/industrial workers are not understated in the text of the HHRA. The Navy acknowledges that the risk characterization text in Appendix F and the Draft Final RI report text do not correspond to the RAGS Table 9 series presented in the appendix F. The risk due to vapor intrusion for both current and future commercial/industrial receptors is 1×10^{-4}, which is within the risk management range. The RAGS Table 9 in Appendix F in the Draft Final RI is incorrect and the Navy will correct this table in the Final RI.

3. **Comment:** The final RI should recommend that an Indoor Air Sampling Assessment of all currently used buildings in OU-2B be conducted as promptly as practical. This recommendation is appropriate, even if the estimate of health risk to current workers is 1×10^{-4}, rather than 1.5×10^{-3} (see our comment 2). Current guidance suggests that Additional Site Characterization, such as soil gas sampling, may be an appropriate next step, followed by an Indoor Air Sampling Assessment if indicated by the Additional Site Characterization. However, at OU-2B several factors argue for an Indoor Air Sampling Assessment next:

a. Indoor air exposures of current workers are ongoing.

b. The Preliminary Screening Evaluation in the draft final RI estimates the health risks to current workers to be more than an order of magnitude above the risk management range.

c. Groundwater characterization, which is used in the draft final RI to estimate indoor air VOC exposures, is poor at many buildings in OU-2B.

d. If the DTSC guidance is followed literally, an unacceptable delay would occur before an Indoor Air Sampling Assessment is completed. The delay would be due to (1) Navy's need to identify funding for Additional Site Characterization; (2) obtaining a Navy contractor to do the sampling; (3) field preparation, mobilization, and sampling; (4) sample analysis; and (5) evaluation and reporting of sampling and analysis results.

Given that it is at least somewhat likely that an Indoor Air Sampling Assessment will ultimately be needed, the pros and cons of conduction an Indoor Air Sampling Assessment next favor doing the Indoor Air Sampling Assessment as promptly as practical. On the con side:

1. A thorough Additional Site Characterization might conclude health risks to current workers are much lower than are estimated in the draft final RI, eliminating the need for an Indoor Air Sampling Assessment.

On the pro side:

1. If current workers are truly at risk, the need for protective action will be conclusively demonstrated sooner; and

2. An Indoor Air Sampling Assessment showing acceptable health risks to current workers would save the time and expense of an Additional Site Characterization.

Navy's May 2005 flyer *Navy Environmental Sampling and Site Update for Operable Unit 2B, Alameda Point, Alameda, California,* states:

"As part of our ongoing environmental program at Alameda Point, the Department of the Navy is informing tenants in Operable Unit 2B that we intend to conduct additional sampling of soil vapors or indoor air at Buildings 14, 113, 162, 163, and 398. The Navy plans to conduct this work in summer of 2005"

ARRA requests that indoor air sampling be conducted, with or without soil vapor sampling.

Response: The Navy intends to estimate the specific risks posed to the current occupants of Buildings 14, 113, 162, 163, and 398 from potential exposures to VOCs in indoor air. However, soil gas sampling rather than indoor air sampling will serve as the source of the additional data that are needed to prepare those estimates, because soil gas data are expected to provide more accurate inputs to the risk evaluation process. For example, tenants' occupancy and industrial operations may interfere with the detection of actual VOCs generated from the groundwater plume. The Navy will conduct "subslab soil gas sampling" as described in the 2004 Final Interim DTSC Vapor Intrusion Guidance Appendix G (DTSC 2004) to collect soil gas collected from the engineered fill directly under the foundation slab. Based on the results, additional site characterization may not be necessary for the evaluation of vapor intrusion, thus, reducing the timeframe for evaluation of the exposure pathway to the occupants.

The Navy plans to collect the soil gas data during late summer or early fall of this year, and the goal of such sampling will be to measure the concentrations of VOCs that may be migrating into the occupied buildings in OU-2B. After the additional soil gas data becomes available, the Navy plans to prepare the building-specific risk estimates and provide them to ARRA and the regulatory agencies.

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Thank you for your comments in this matter. If you have any questions, please call Ms. Glenna Clark at (619) 532-0951 or me at (619) 532-0907.

Sincerely,

THOMAS L. MACCHIARELLA
BRAC Environmental Coordinator
By direction of the Director

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